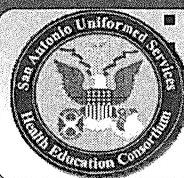


REPORT DOCUMENTATION PAGE				Form Approved OMB No. 0704-0188
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1. REPORT DATE (DD-MM-YYYY) 28/06/2018	2. REPORT TYPE Poster	3. DATES COVERED (From - To) 06/28/2018-06/29/2018		
4. TITLE AND SUBTITLE Incorporation of Mindfulness Exercises to Reduce Anxiety and Pain during Urodynamic Testing: A Randomized Controlled Pilot Study		5a. CONTRACT NUMBER 5b. GRANT NUMBER 5c. PROGRAM ELEMENT NUMBER 5d. PROJECT NUMBER 5e. TASK NUMBER 5f. WORK UNIT NUMBER		
6. AUTHOR(S) Uberoi, Pansy Maj				
7. PERFORMING ORGANIZATION NAME(S) AND ADDRESS(ES) 59th Clinical Research Division 1100 Willford Hall Loop, Bldg. 4430 JBSA-Lackland, TX 78236-9908 210-292-7141		8. PERFORMING ORGANIZATION REPORT NUMBER 17668		
9. SPONSORING/MONITORING AGENCY NAME(S) AND ADDRESS(ES) 59th Clinical Research Division 1100 Willford Hall Loop, Bldg. 4430 JBSA-Lackland, TX 78236-9908 210-292-7141		10. SPONSOR/MONITOR'S ACRONYM(S) 11. SPONSOR/MONITOR'S REPORT NUMBER(S)		
12. DISTRIBUTION/AVAILABILITY STATEMENT Approved for public release. Distribution is unlimited.				
13. SUPPLEMENTARY NOTES SURF Meeting, San Antonio, TX, June 28-29, 2018				
14. ABSTRACT Incorporation of Mindfulness Exercises to Reduce Anxiety and Pain during Urodynamic Testing: A Randomized Controlled Pilot Study Pansy Uberoi MD, MPH, Anna Smitherman PhD, Forrest Jellison MD San Antonio, TX. Presentation to be made by Dr. Uberoi				
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15. SUBJECT TERMS				
16. SECURITY CLASSIFICATION OF: a. REPORT b. ABSTRACT c. THIS PAGE		17. LIMITATION OF ABSTRACT UU	18. NUMBER OF PAGES	19a. NAME OF RESPONSIBLE PERSON Clarice Longoria 19b. TELEPHONE NUMBER (Include area code) 210-268-2201



Incorporation of Mindfulness Exercises to Reduce Anxiety and Pain During Urodynamic Testing: a Randomized Controlled Pilot Study

Pansy Uberoi MD, MPH; Forrest Jellison MD; Anna Smitherman PhD

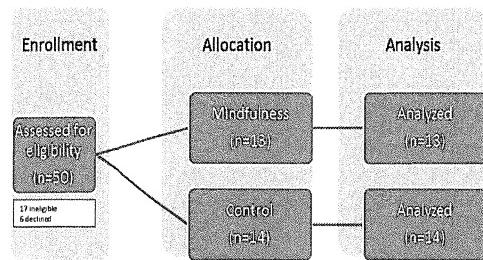
San Antonio Uniformed Services Health Education Consortium, San Antonio, TX

Objective

Mindfulness exercises have shown improvement in emotional coping and reduction of anxiety, leading to incorporation in treatment plans for chronic and acute pain conditions^{1,2}. The present randomized pilot study compares the impact of mindfulness among patients undergoing invasive in-office urodynamic studies^{3,4} with primary outcome of anxiety and secondarily pain, fear and embarrassment.

Methods

Randomized, controlled, pilot study

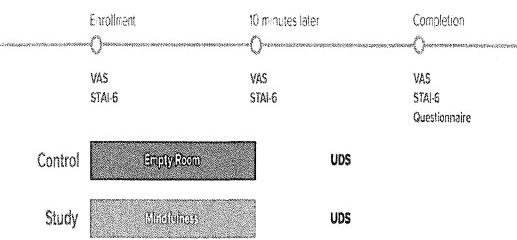


Data collected

- Visual Analog Scale for Pain (VAS)
- State-Trait Anxiety Inventory (STAI-6)
- Participant Questionnaire

Primary endpoint – anxiety measured by STAI-6

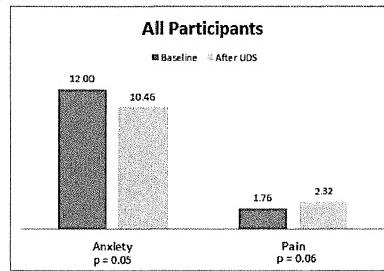
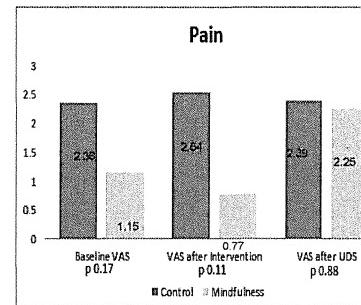
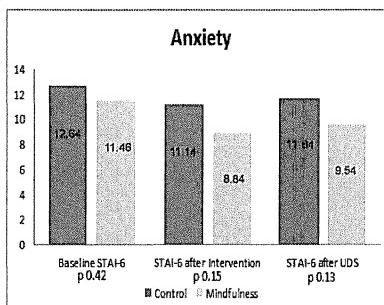
Secondary endpoints – pain, fear, embarrassment



Results

Demographics	Mindfulness	Control	p-value
Age [mean and (SD)]	59.23 (10.83)	57.46 (14.85)	0.73
Male (%)	8% (1)	0% (0)	
Female (%)	92% (12)	100% (13)	0.23
Race (%)			
White	38% (5)	54% (7)	
Black	31% (4)	15% (2)	
Hispanic	23% (3)	23% (3)	
Other	8% (1)	8% (1)	0.80
Perceived Health* [mean and (SD)]	2.54 (0.65)	1.85 (0.69)	0.02

Symptoms	Mindfulness (n)	Control (n)	p-value
Leakage/Incontinence	65% (9)	77% (10)	0.66
Obstruction/Hesitancy	31% (4)	15% (2)	0.35
Urgency	77% (10)	62% (8)	0.39
Frequency	54% (7)	62% (8)	0.69



Emotions	Mindfulness	Control	p-value
Anxious	1.00 (1.08)	1.31 (1.11)	0.45
Afraid	0.08 (0.23)	0.85 (1.21)	0.07
Embarrassed	0.54 (0.88)	1.23 (1.09)	0.07
Uncomfortable	1.25 (1.22)	1.23 (1.36)	0.80
Pain	0.92 (1.04)	1.31 (1.38)	0.55
Bladder Pain	1.39 (1.12)	0.62 (0.18)	0.05
Rectal Pain	0.92 (0.49)	1.08 (1.04)	0.80
Worry about Radiations	0.08 (0.28)	0.23 (0.60)	0.52
Worry about UTI	0.15 (0.36)	0.92 (1.32)	0.04
Worry about Results	0.54 (0.66)	0.62 (0.77)	0.86

Disclaimer: The views expressed are those of the authors and do not reflect the official views or policy of the Department of Defense or its Components. The voluntary, fully informed consent of the subjects used in this research was obtained as required by 32 CFR 219 and DODI 3216.02_AFI 40-204

Discussion

Urodynamics is associated with anxiety, embarrassment and discomfort³. Mindfulness exercises have been reported to improve emotional coping in acute and chronic conditions^{1,2}.

In this pilot randomized control trial, mindfulness exercises prior to UDS did not show an improvement in the primary outcomes anxiety as measured by the STAI-6. Secondary outcomes of fear, embarrassment, and worry about UTI were noted to be lower in the mindfulness group with statistical significance or trend toward it. As hypothesized, there was no significant difference in pain levels on VAS. Bladder pain was significantly worse in the mindfulness group. When taken in aggregate, anxiety levels decreased significantly for all patients.

We suspect a confounding effect may have been present in the control group as several subjects self-reported performing their own "relaxation techniques" in the quiet, empty room.

Summary

1. Mindfulness exercises prior to UDS did not result in decreased anxiety or pain.
2. Fear and embarrassment were significantly lower or trending in the mindfulness group.
3. Future study with a better designed control that simulates the clinical environment with adequate power may impact anxiety and pain during UDS.

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Incorporation of Mindfulness Exercises to Reduce Anxiety and Pain during Urodynamic Testing: A Randomized Controlled Pilot Study

Pansy Uberoi MD, MPH, Anna Smitherman PhD, Forrest Jellison MD
San Antonio, TX. Presentation to be made by Dr. Uberoi

Objectives: Mindfulness exercises have shown improvement in emotional coping and reduction of anxiety, leading to their incorporation into treatment for acute and chronic pain conditions. The present trial compares the impact of mindfulness exercises as they pertain to anxiety and pain levels among patients undergoing invasive in-office urodynamics (UDS).

Methods: Twenty-seven patients were randomized to either psychologist led mindfulness exercises or an empty quiet room prior to undergoing UDS. The personnel performing UDS were blinded to the intervention. The primary outcome, reduction of anxiety after UDS, was measured by the state-trait anxiety inventory (STAI-6). STAI-6 consists of questions regarding positive aspects of mood and negative aspects of mood. Secondary outcome of pain was measured by the visual analog scale (VAS). Participants completed questionnaires at baseline, after control/study intervention, and immediately after UDS. Wilcoxon-Mann-Whitney test was performed for difference between anxiety and pain between groups. Secondary analyses were performed with Wilcoxon sign rank test to measure differences in changes within each group.

Results: Demographics, past medical history and presenting symptoms were similar between the groups. There was no statistically significant difference in anxiety in the mindfulness or control group at baseline ($p=0.42$), after intervention ($p=0.15$), or after UDS ($p=0.13$). Pain was not statistically different between groups at baseline ($p=0.17$), after intervention ($p=0.11$), after UDS ($p=0.38$). Secondary outcomes of fear ($p=0.05$) and embarrassment ($p=0.07$) were lower in the mindfulness group. When taken in aggregate, anxiety levels, as measured by STAI-6 were significantly different for all participants mean 12.00 at baseline and 12.46 after UDS ($p=0.05$).

Conclusions: This pilot study does not reflect reduction in patients' anxiety and pain during urodynamics procedure. Fear and embarrassment were noted to be lower in the mindfulness group. Decrease in anxiety was noted in all patients. We suspect confounding effect may have been present in the control group based on self-report of 'relaxation techniques' used by control patients in the quiet, empty room.

Source of Funding: None

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